

Extreme sleep durations may affect brain health in later life

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A new research study led by Brigham and Women's Hospital (BWH) published in *The Journal of the American Geriatrics Society* in May, shows an association between midlife and later life sleeping habits with memory; and links extreme sleep durations to worse memory in later life. The study suggests that extreme changes in sleep duration from middle age to older age may also worsen memory function.

"Sleep Duration In Midlife and Later Life In Relation to Cognition: The Nurses' Health Study," led by Elizabeth Devore, ScD, instructor in medicine in the Channing Division of Network Medicine at BWH found that women who slept five or fewer hours, or nine or more hours per day, either in midlife or later life, had worse [memory](#), equivalent to nearly two additional years of age, than those sleeping seven hours per day. Women whose [sleep duration](#) changed by greater than two hours per day over time had worse memory than women with no change in sleep duration.

This study was the first to evaluate associations of sleep duration at midlife and later life, and change in sleep duration over time, with memory in 15,263 participants of the Nurses' Health Study. Participants were female nurses, aged 70 or older and were free of stroke and depression at the initial cognitive assessment.

"Given the importance of preserving memory into later life, it is critical to identify modifiable factors, such as sleeping habits, that may help achieve this goal," Devore stated. "Our findings suggest that getting an 'average' amount of sleep, seven hours per day, may help maintain memory in later life and that clinical interventions based on sleep therapy should be examined for the prevention of cognitive impairment."

Specifically, researchers report that:

- Extreme sleep durations may adversely

affect memory at older ages, regardless of whether they occur at mid-life or later-life.

- Greater changes in sleep duration appear to negatively influence memory in older adults.
- Women with sleep durations that changed by two or more hours per day from midlife to later life performed worse on memory tests than women with no change in sleep duration, equivalent to being one to two years older in age, compared to those whose sleep duration did not change during that time period.

"These findings add to our knowledge about how sleep impacts memory," said Devore. "More research is needed to confirm these findings and explore possible mechanisms underlying these associations."

Provided by Brigham and Women's Hospital

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